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- Declaration under Rule 4.17:**  
— of inventorship (Rule 4.17(iv)) for US only
- Published:**  
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- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: CIRCUIT AND METHOD FOR PROVIDING AN AUTO-OFF AND/OR AUTO-ON CAPABILITY FOR AN AUDIO DEVICE

(57) Abstract: A circuit and method of providing an auto-on and/or auto-off capability for an audio device, of a type having an audio plug which mates with the output jack of an audio source. The portable transmitter modulates audio signals from the audio source onto a carrier and transmits them to a receiver. The auto-on and auto-off capability is provided to prolong battery life and degradation of the transmitter circuit and comprises pinching off a FET when the circuit is in an "off" state. This occurs when a pre-determined threshold in a capacitor is reached by not discharging that capacitor. The capacitor is discharged by dropping a comparator input below a pre-determined threshold limit when presented with an audio peak and wherein the drop in value causes the comparator output to go low, causing the capacitor to discharge and causing the FET to supply power to the regulator.

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GB, GD, GE, GH, GM, GR, HU, ID, IL, IN, IS, JP, KE,  
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,  
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,  
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,  
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GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK,  
TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,  
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Declaration under Rule 4.17:

— of inventorship (Rule 4.17(iv)) for US only

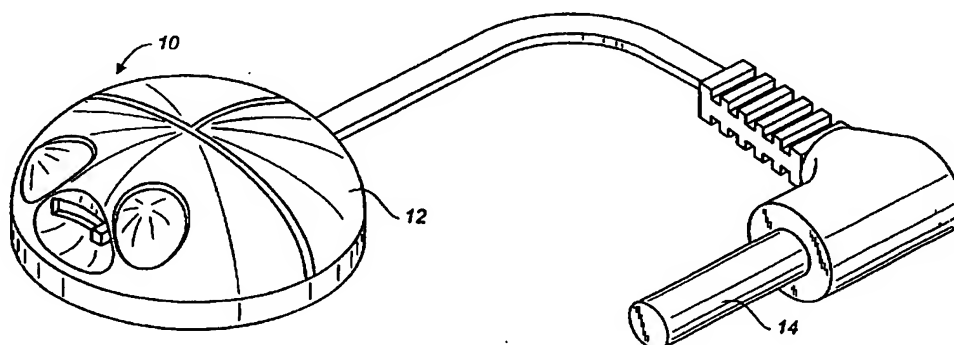
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(54) Title: CIRCUIT AND METHOD FOR PROVIDING AN AUTO-OFF AND/OR AUTO-ON CAPABILITY FOR AN AUDIO  
DEVICE



(57) Abstract: A circuit (Figs. 2A-2D) and method of providing an auto-on and/or auto-off capability for an audio device, of a type having an audio plug (14) which mates with the output jack of an audio source. The portable transmitter (10) modulates audio signals from the audio source onto a carrier and transmits them to a receiver. The auto-on and auto-off capability is provided to prolong battery life and degradation of the transmitter circuit and comprises pinching off a FET (Q2) when the circuit is in an "off" state. This occurs when a pre-determined threshold in a capacitor (C29) is reached by not discharging that capacitor. The capacitor (C29) is discharged by dropping a comparator input below a pre-determined threshold limit when presented with an audio peak and wherein the drop in value causes the comparator output to go low, causing the capacitor to discharge and causing the FET (Q2) to supply power to the regulator.

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# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/00452

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : H03F 21/00; G10H 1/00

US CL : 381/120, 118, 55, 77, 79, 110, 123; 307/125, 130

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 381/120, 118, 55, 77, 79, 110, 123; 307/125, 130

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
None.

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
Please See Continuation Sheet

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4,413,290 A (FURUTA) 01 November 1983 (01.11.1983), see entire document.	1-14
Y	US 4,536,808 A (FUJIBAYASHI) 20 August 1985 (20.08.1985), see Fig. 2 and its description on column 2.	1-14
A	US 5,022,305 A (BUTLER) 11 June 1991 (11.06.1991), see entire document.	1-14
A	US 6,304,008 B1 (GOTO et al) 16 October 2001 (16.10.2001), see entire document.	1-14

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T"

later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X"

document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y"

document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&"

document member of the same patent family

Date of the actual completion of the international search

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Name and mailing address of the ISA/US

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**INTERNATIONAL SEARCH REPORT**

PCT/US04/00452

**Continuation of B. FIELDS SEARCHED Item 3:**

BRS search.

Search terms: auto-on, auto-off, FET, portable transmitter, capacitor, pinch off, threshold, audio peak, discharge.